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ABSTRACT

This final report of the Minnesota Research Coordinating Unit (RCU) for Vocational Education summarizes the activities covered between March 1967 and August 31, 1969. Major topics considered are (1) background of the Unit, (2) methods, including organization, personnel, and facilities, (3) a listing of activities and how they meet the Unit's objectives, and (4) conclusions. Appended are a list of publications of the RCU and a list of other publications of the Research Coordinating Staff. [Not available in hard copy due to marginal legibility of original document.] (GR)

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FINAL REPORT
Project No. 6-2987
Grant No. OEG-3-7-062987-1593

MINNESOTA RESEARCH COORDINATING UNIT
FOR
VOCATIONAL EDUCATION

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September 1969

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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The research reported herein was performed pursuant to a grant with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
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I. INTRODUCTION

Summary

The "Minnesota Research Coordinating Unit" was formed on June 1, 1965. It has been in continuous operation at the University of Minnesota since that date, being supported by (a) the University, (b) grants from the Office of Education, and (c) contracts with other public agencies. The operation of the Unit from its inception to February 28, 1967 was described in a Final Report (Project No. 5-0097) dated March 1967. An Interim Report (Project Nos. 5-0097 and 6-2987), dated October 1968, was also submitted to the Office of Education and covers the period of operation from June 1, 1965 to September 30, 1968. This Final Report (Project No. 6-2987) describes Unit activities between March 1, 1967 and August 31, 1969.

Background

The recognition of the need for systematic and continuous research-development-dissemination efforts in occupational education has resulted from a growing awareness of the relationship between education and socio-economic well-being (both individual and public), the critical role of occupational education in the educational enterprise, and the need to enhance the efficiency and effectiveness of all forms of occupational education.

The amount and diversity of the kinds of research-related efforts required to improve occupational education demands that a variety of functions be institutionalized within each state. The differing nature of these continuing functions appear to call for at least two administrative environments for their efficient conduct. Thus, in Minnesota, the State Department of Education, the State Junior College Board, the State College Board and the University decided jointly in 1965 that the Research Coordinating Unit should be located at the University of Minnesota, and that it should be given responsibility for (a) stimulating and facilitating research and development activities, (b) securing voluntary coordination among researchers, (c) providing technical consultation, (d) offering dissemination services, (e) conducting research and development projects with long-range import, and (f) developing research producer and consumer competencies.

These functions were recognized as being necessary to the long-range improvement of practice in occupational education and suitable to the tradition, resources, and mission of the University. Further, because of the University's long history of involvement with occupational education, the Unit could maintain the necessary coordination with all those offering secondary and post-secondary vocational programs, as well as the non-educational state agencies planning for the development and utilization of human resources. On the other hand, it was recognized in 1965 that the State Department of Education provided the best environment in which to carry out operational research and normative development efforts, and that those functions should be centered in a section of the Department under the direct supervision and control of the State Director for Vocational Education.¹

¹ Approximately nine months after the formation of the RCU in 1965, a Program Planning and Development Section was, in fact, created in the Vocational Education Division of the State Department.

Initially, the RCU placed its emphases upon activities designed to stimulate and facilitate research and development efforts. It soon became obvious, however, that there was a dearth of competent, interested researchers available and the Unit's attention, therefore, turned to research training. With reductions during the next few years in federal appropriations for vocational research, the ability of the Unit to stimulate new activities was hampered, so its highly qualified personnel turned to the conduct of staff studies. Most recently, as the results of several years of research and development efforts around the nation gradually became available, the Unit began to accelerate the development of its dissemination capabilities. Thus, the functions originally assigned to the Unit in 1965 have received varying degrees of attention through the years as emerging conditions seemed to dictate; the same functions, moreover, appear to be equally valid today.

II. METHODS

Organization

The Unit has been located physically on the Minneapolis Campus of the University of Minnesota, and administratively in the College of Education of the University.

Chart 1 presents the formal organizational structure of the Unit.

The co-directors were immediately responsible for the administration and operation of the Unit. They reported directly to the Dean, College of Education, for personnel and administrative matters.

Technical consultants, including special advisory committees, were utilized when and as needed in the planning and conduct of Unit activities.

An Advisory Committee served to bring together much of the leadership in the State directly concerned with the problems and conduct of occupational education, with secondary and higher education in general, with occupational and educational research, and with statewide planning for human resources development. The role of the Committee was to recommend policy, suggest and facilitate activities, provide a mechanism for coordinating the relevant operations of all groups involved, and evaluate progress of the Unit. Membership consisted of the following persons: Director, Upper Midwest Research and Development Council; Director, Upper Midwest Regional Educational Laboratory; Chancellor, State College Board; Chancellor, State Junior College Board; Commissioner of Education, State of Minnesota; Assistant Commissioner for Vocational Education, State of Minnesota; Vice President for Educational Relationships and Development, University of Minnesota; Social Resources Director, State Planning Agency; Dean, College of Education, University of Minnesota; Research Director, Minnesota Department of Employment Security; and the two co-directors of the Unit (ex-officio).

A very close working relationship among the Program Planning and Development Section of the Vocational Division, State Department of Education, the staff of the State Junior College Board, and the Unit was obviously necessary. Therefore, in addition to higher level representation on the Advisory Committee, the Supervisor, PP & D Section, and a representative of the State Junior College Board, with secretarial assistance, were assigned part-time to the Unit to insure the requisite liaison and coordination of activities.

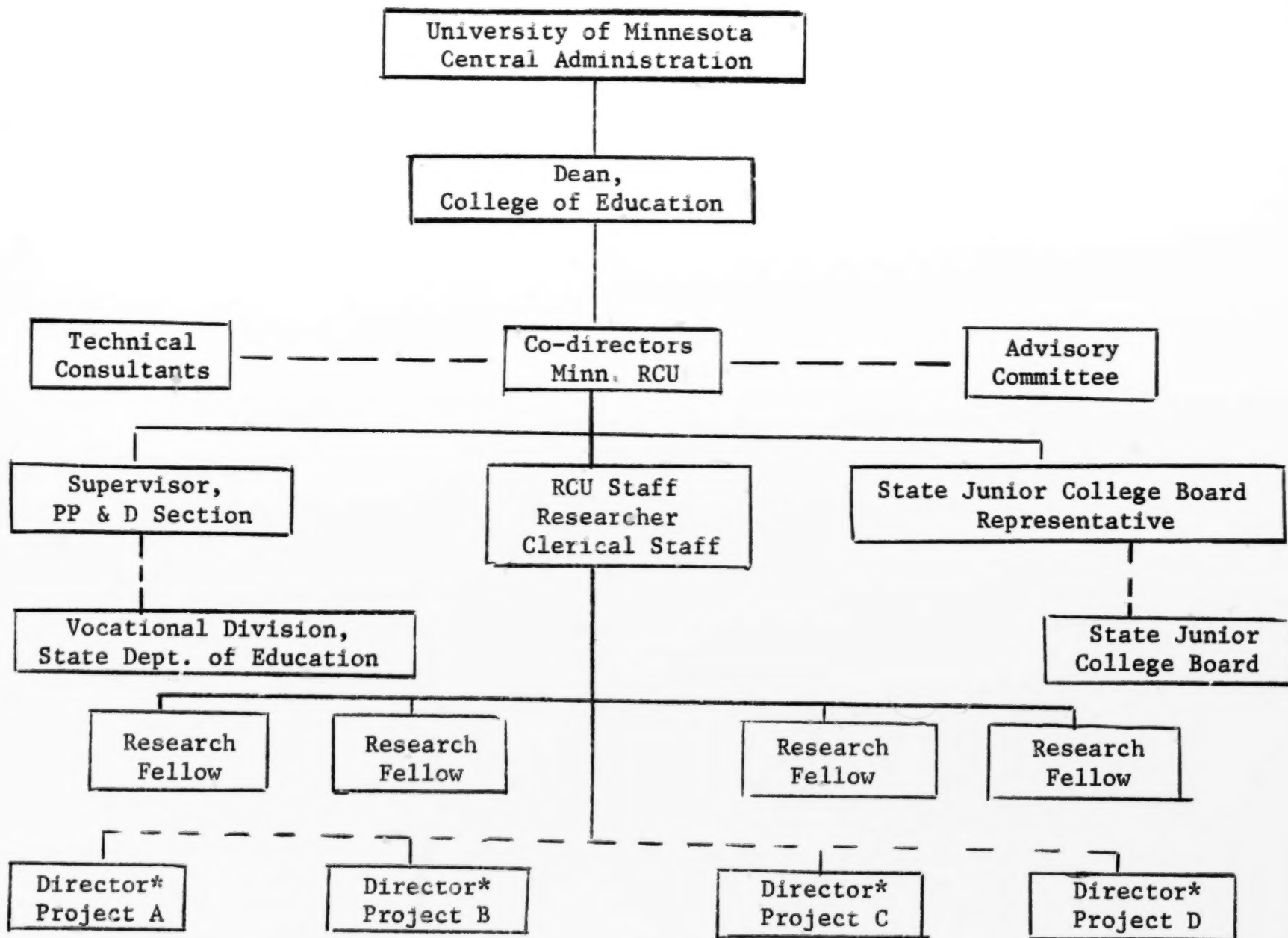
University staff members and graduate students employed by the Unit on a part time and/or temporary basis retained their departmental and college affiliations, but were supervised by the co-directors for work pertaining to their Unit assignments. Non-university personnel employed by or assigned to the Unit on a part-time and/or temporary basis (such as the PP & D Section and State Junior College Board representatives) were supervised by the co-directors for work pertaining to their Unit assignments.

Personnel

Co-directors of the Unit were Dr. Jerome Moss, Jr., Professor of Industrial Education, and Dr. Howard F. Nelson, Professor and Chairman, Department of Industrial Education. Both were (a) full members of the Graduate School, University of Minnesota, (b) members of many standing committees of the College of Education (e.g. Policy and Planning, Vocational and Technical, etc.), and (c) directors of separately funded Bureau of Research projects in occupational education.

Chart 1.

ORGANIZATION CHART



*Separate projects may be coordinated or administered by the Unit.

Until September 1968, three to four research fellows, one of whom was usually full-time and the others part-time have been employed by the Unit at any given time. They were selected from among the advanced (Ph.D.) graduate students on the campus. A total of thirteen different students have been utilized during the period under review, representing the fields of industrial education, statistics and measurement, home economics education, and agricultural education. Since September 1968, a full-time professional staff member has been employed.

In addition to employed graduate students, six other advanced graduate students have spent varying amounts of their research practicums working in the Unit.

The size of the clerical staff has varied from one full-time secretary to the equivalent of three full-time persons.

Table 1 gives the names, positions, percent times of employed persons engaged in Unit activities, and dates of employment between March 1, 1967 and August 31, 1969.

Facilities

Since its formation, the Unit has been located in three places; with each move the space allocation has increased and the location has become more desirable. The present location is in a relatively new building which houses College of Education personnel. Space is now available to accomodate the library, three secretaries, a full-time staff member, and seven graduate students.

The Unit's location in and administrative association with the University makes readily accessible many resources which facilitate its activities, such as: CD1604 and CD6600 computer installations; general and specialized libraries; a staff of nationally known teacher educators in all the vocational fields; consultants from education and related disciplines, as well as research specialists; research organizations, including the Human Learning Center, Center for Programmed Instruction, Minnesota Curriculum Development Laboratory, Industrial Relations Center, Bureau of Field Studies and Surveys, and the Center for Curriculum Studies. But the greatest resource is graduate students; they not only service the Unit, but are perhaps its most important beneficiaries.

TABLE 1
COORDINATION STAFF

NAME	POSITION	% TIME DEVOTED	DATES OF EMPLOYMENT
A. Professional			
Jerome Moss, Jr.	Co-director	50%	3/1/67-8/31/69
Howard F. Nelson	Co-director	50% 10%	3/1/67-9/31/68 10/1/68-6/15/69
Brandon B. Smith	Research Fellow	50% 100%	3/1/67-6/15/68 6/16/68-9/15/68
	Assistant Professor	100%	9/16/68-8/31/69
Editha Jiloca	Research Fellow	50%	3/1/67-6/15/68
Marshall Hahn	Research Fellow	50% 20%	3/1/67-6/15/67 6/16/67-9/15/67
Frank Pratzner	Research Fellow	100% 25%	3/1/67-9/15/68 9/16/68-7/31/69
Robert Randleman	Assistant Professor Associate Professor	100% 100%	3/1/67-6/15/67 7/1/69-7/18/69
Joseph Malinski	Supervisor, PP & D	25% 50%	3/1/67-9/30/68 10/1/68-8/31/69
Howard Bergstrom	State Jr. College Board	25% 50%	3/1/67-9/30/68 10/1/68-8/31/69

Table 1 (continued)

NAME	POSITION	% TIME DEVOTED	DATES OF EMPLOYMENT
David Wheeler	Research Fellow	25%	9/15/67-6/15/68
		50%	6/16/68-8/23/69
		100%	8/25/69-8/29/69
Melvin E. Johnson	Research Fellow	25%	6/16/68-8/24/68
Darrell Heitzman	Research Fellow	Misc.	8/1/68-8/15/68
Howard Kittleson	Research Fellow	15%	3/16/69-6/30/69
Robert E. Kuhl	Research Fellow	50%	6/16/69-6/30/69
Sue Reitan	Instructor	Misc.	7/7/69-8/22/69
Stephen Miletich	Instructor	Misc.	7/21/69-8/15/69
William E. Stock	Research Fellow	25%	7/21/69-8/22/69
Marjory Hanson	Research Fellow	25%	7/21/69-8/22/69

Table 1 (continued)

NAME	POSITION	% TIME DEVOTED	DATES OF EMPLOYMENT
B. Clerical			
Stella Hultman	Senior Secretary	100%	3/1/67-5/24/68
Geraldine Kennedy	Clerk Typist	50%	3/1/67-6/30/67
Sandra Melzer	Clerk Typist	50%	6/1/67-6/30/68
Jane Peck	Clerk	Misc.	7/67
Janis Hustad	Clerk	Misc.	7/67
Martha Atwell	Clerk	Misc.	7/67
Gail Goulet	Clerk Typist	50%	9/18/67-8/16/69
Dianne Weisert	Clerk	Misc.	10/67
Jean Husing	Clerk Typist	50%	12/18/67-3/31/68
Margueritte Fergal	Clerk Typist	Misc.	1/68
Cheryl Royce	Clerk Typist	50%	3/14/68-9/16/68

Table 1 (continued)

NAME	POSITION	% TIME DEVOTED	DATES OF EMPLOYMENT
Sandra Emmerson	Senior Secretary	100%	5/16/68-6/30/68
Sandra Hyvare	Clerk Typist	Misc.	6/10/68-11/15/68
Cynthia Winter	Clerk Typist	100%	7/31/68-11/15/68
Arllys Clements	Clerk Typist	Misc.	5/69
Karen Mittlesdaedt	Clerk Typist	100%	6/1/69-8/15/69
Karen Caron	Senior Secretary	100%	7/8/69-8/31/69

III. RESULTS

To facilitate the summarization of major Unit activities during the last two and one-half years, and to permit some assessment of their relevance, activities have been organized according to the Unit objective each is presumed to have served.

Publications of the Unit, referred to by number in this section, are listed in Appendix A. Other publications by Unit staff members are given in Appendix B.

Objective 1

Stimulating, facilitating, and securing the voluntary coordination of research and development activities in occupational education.

1. An Advisory Committee has been utilized to (a) indicate significant statewide problem areas that deserve investigation, (b) suggest priorities for Unit functions and activities, and (c) evaluate progress of the Unit. The Committee has also proved to be a useful forum in which members exchange information and ideas relevant to the coordination of occupational education programs in the State.
2. Liaison and coordination has been developed among the operational and research arms of the State Department of Education, the State Junior College Board, and the University of Minnesota. This has been accomplished by (a) the appointment of an Assistant Education Director responsible for occupational education research and program development in the junior college system, and (b) part-time appointments among the Program Planning and Development Section, State Department of Education, the Assistant Education Director of the junior college staff, and the Unit.
3. Information about important vocational problem areas in which research should be conducted, and about research being conducted, in the State has been ascertained and disseminated throughout the State by means of (a) mailed publications (4, 10), (b) seven research meetings held at various locations throughout the State, to which potentially interested persons were invited, (c) individual meetings with research-oriented organizations at the University of Minnesota, (d) speeches at and participation in professional meetings in the State, and (e) graduate seminars in various departments of the University.
4. The Unit received approximately \$18,000 since March 1967 from the Upper Midwest Regional Educational Laboratory for three projects. These were designed to stimulate and coordinate the research-related and teacher education activities of vocational educators in the five-state region: (a) A series of meetings to identify significant problem areas in the region (North Dakota, South Dakota, Iowa, Wisconsin, Minnesota) and to prepare a proposal for the conduct of one of those problem areas (2); (b) a three-day regional conference on "Developing Innovative Vocational-Technical Teacher Education Programs" (12); and (c) a three-day invitational conference to define the "developmental" process and to begin to identify the steps in the process (13).
5. Special efforts have been made, through individual meetings, to establish liaison among research organizations at the University, e.g. Industrial Relations Center, Center for Curriculum Studies, Center for Programmed

Instruction, Center for Human Learning, Bureau of Institutional Research, and to encourage their conduct of studies relevant to occupational education.

6. Staff members attended twenty-six different research-related regional and national meetings during the period covered by this report. These meetings ranged from one-day to one-week in length, typically involved no direct expense to the Unit, and provided an excellent opportunity to develop and maintain liaison with the national community of researchers (and practitioners) in occupational education.
7. The Unit staff has provided research-related consultation to about two hundred in-state projects during the period of this report. Consultant service is given upon request; it in no way constitutes an endorsement of the project nor is it a required step in the process of securing funds from public or private agencies. Clients have included staff of the University of Minnesota, state colleges, junior colleges, private schools, local and area public schools and private research organizations, as well as graduate students.
8. Consultation and related professional services have also been provided by Unit staff to a variety of out-of-state individuals and groups. The following are illustrative of the nature of the services: (a) President, American Council of Industrial Arts Teacher Educators, (b) Member, Policy and Planning Committee, Trade and Industrial Division, AVA, (c) Vice President, Board of Directors, Occupational Training Center, (d) Chairman, AVA Research Committee, (e) Member, National Manpower Advisory Committee, Subcommittee on Research, (f) field reader, USOE, Bureau of Research, (g) President-elect, American Vocational Education Research Association, (h) Chairman, Advisory Committee to the Center for Curriculum Studies, and (i) consultants to several bureaus and divisions of the USOE, the American Vocational Association, the Center for Research and Leadership Development in Vocational Education, Upper Midwest Regional Educational Laboratory, and the Office of Manpower Research (Department of Labor).

Objective 2

Providing clearinghouse-dissemination services for research-related information to assist research, development and implementation efforts.

1. An occupational education research library has been developed which presently consists of approximately 2000 pieces of hard copy, 1500 microfilm and microfiche with ED numbers, vertical file materials, and about 1000 microfiche with VT numbers. Library equipment includes two microfiche readers, one reader-printer, and one microfiche developer and printer, in addition to the necessary storage and shelving. The library can be used by anyone during regular working hours, five days per week; materials can also be borrowed. Special computer programs for search and retrieval have been written, and a library tape of 3500 items (hard copy materials plus ED microfiche) has been prepared. We can now do a computer search of the tape based upon keywords, problem areas, authors, etc. and secure a bibliographic printout of relevant items.
2. A mailing list has been prepared and has been revised twice since March 1967. The list, of about 9500 names, is on IBM cards prepared for use in the card sort machine, and by the computer-printer for printing gummed labels. The list of names include selected persons out-of-the-state as well as in-state. Card sorts can be made on the basis of place of employment, field of interest, function (and certain special categories).

3. The following kinds of material have been published and disseminated by the Unit:
- (a) A bibliography of relevant studies completed in Minnesota between 1965-67 (4); a summary of those studies, focusing upon their implications for practice and future research (10); a national survey of doctoral research in industrial education completed since 1965 (published in three issues of the Journal of Industrial Teacher Education).
 - (b) Reviews of research in vocational and technical teacher education (6), creativity (9), and student selection and the prediction of success (18); a review of women in the world of work is currently in preparation.
 - (c) Two technical reports concerning selecting and developing a research problem (5) and evaluating vocational programs (8) have been prepared and distributed to researchers.
 - (d) The reports of conferences on teacher education (12) and the developmental process (13) were distributed to a select national audience. The report of a research conference in business education (21) is now in press.
 - (e) Reports of nine R & D projects (2,3,7,11,14,15,17,19,20) were disseminated in the state and to a purposive national sample. Two additional project reports (22,23) now in preparation will be utilized in the state.
 - (f) The "Final" report of the Unit to March 1967 (1), an "Interim Report" (16), and quarterly progress reports have been forwarded to the USOE, other RCU's and selected individuals in Minnesota.
 - (g) Appendix B contains a list of twenty-one additional publications authored by Unit staff members.
4. The co-directors and other staff members of the Unit have engaged in a variety of activities designed to disseminate research-related information. For example, staff members have served (a) on the Advisory Committee to "Research Visibility" (a monthly publication of AVA), (b) on the ERIC Advisory Committee for vocational and technical education, (c) as Editor of the Journal of Industrial Teacher Education, (d) as Editor of the Review of Educational Research (Oct. 1968 issue), (e) as Program Chairman, Department of Research and Evaluation, AVA for the 1968 national convention, (f) as Program Chairman, Research Section, New and Related Services Division, AVA for the 1969 national convention, and (g) as presenters and chairman at many state, regional, and national research meetings, e.g. AVA, AERA, AIAA, etc.

Objective 3

Encouraging, coordinating and conducting training activities designed to increase the number and improve the competence of producers and consumers of occupational education research.

1. The USOE has supported, for the last three years, five to six graduate fellows in a three-year Ph.D. program designed to prepare researchers in occupational education. The program is administered by the Unit in behalf of the five vocational departments in the College of Education.

In addition, the Unit provides one opportunity for the fellows to receive research practicum experiences as a part of their total training program. The program has recently been renewed to permit adding new fellows for another three-year period.

2. Unit staff are currently preparing a proposal to the USOE for fifteen fellowships under Part F, Vocational Education Leadership Development, VEA '68. This program, if funded, will also be operated in behalf of the vocational departments of the College.
3. In addition to the six research fellows noted in item 1 above, the Unit has employed thirteen doctoral students since March 1967. The activities in which they have engaged has resulted in an appreciable improvement in their research competencies; the long-term influence of this experience upon their professional careers, as well as the salutary effect upon their peers, may be even more significant.
4. Unit staff members teach regular research-related graduate courses in the College, advise masters and doctoral candidates, and conduct a semi-monthly research seminar for interested staff and students.
5. The Unit has co-sponsored (with other groups in the College of Education) two invitational seminars in advanced research training. Both seminars were two-three days long and dealt with various applications of regression models to the design and analysis of educational research. Instructors at these seminars were Joe Ward, Jr., Chief of Computer Analysis Branch, Air Force Systems Command, and James Terwilliger, Professor of Educational Psychology, University of Minnesota (formerly at E.T.S.).
6. The co-directors have engaged in many training efforts conducted off-campus, such as: (a) Instructor or educational coordinator at the AVA pre-session research training institutes in 1966, 1967, 1968, and (forthcoming) 1969; (b) instructor or guest lecturer at four national business education research conferences; (c) instructor or guest lecturer at five USOE sponsored industrial arts and vocational education institutes; (d) directors of an institute dealing with the use of student characteristics in developing vocational curriculums (USOE sponsored); and (e) participant at AERA training pre-sessions.

Objective 4

Participating in the conduct of research and the development of innovative instructional materials that have potential for major improvements, immediate and/or long range, in occupational education.

1. In addition to the conduct of surveys which resulted in publications itemized under objective 2 (clearinghouse-dissemination), the following studies have been completed by Unit staff:
 - (a) Moss, Jerome Jr. and Nelson, Howard F., "Planning for a Cooperative Region-wide Study in Occupational Education" (2)
 - (b) Moss, Jerome Jr. and Pucel, David J., "Identifying the Technical Associative Conceptual Structure of a Criterion Group of Flexible Radio and Television Repairmen" (Unpublished)

- (c) Randleman, Robert R. and Wheeler, David N., "Report of An Evaluation of a Summer Institute for Training Researchers in Occupational Education" (15)
 - (d) Pratzner, Frank C. and Hanson, Marjory, "The Relative Effectiveness of Two Ways of Structuring and Presenting Pre-service and Initial In-service Vocational-Industrial Teacher Education Lessons" (17)
2. The following studies have been completed with the partial support of the Unit:
- (a) Smith, Brandon B., "Testing an Empirical Procedure for Identifying Technical Associative Conceptual Structure: Discriminating Between Flexible and Inflexible Radio and Television Repairmen" (Unpublished)
 - (b) Pratzner, Frank C., "Testing an Empirical Procedure for Identifying Technical Associative Conceptual Structure: Discriminating Between Workmen Within and Between Two Occupations" (Unpublished)
 - (c) Johnson, Brian B., "A Study in the Prediction of Final Grade Point Averages for Industrial Education Majors at the University of Minnesota" (Unpublished)
 - (d) Pucel, David J., "Variables Related to MDTA Trainee Employment Success in Minnesota" (7)
 - (e) McMillion, Martin B., "Correlates of Leadership Decision Patterns of High School Pupils - Socio-economic Status, High School Grade, and Connotative Meaning of the Word 'Leadership'" (11)
 - (f) Hartog, Edward and Marvin, Paul, "Developing Self-Evaluation Systems for Local Vocational Programs" (Unpublished)
 - (g) Anderson, Robert, "Vocational Technical Education 1968" (14)
 - (h) Randleman, Robert, "An Evaluation of the Undergraduate Industrial Education Curriculum at the University of Minnesota" (Unpublished)
 - (i) Bortz, Richard F., "A Study of the Effect of Physical Maturity and Intelligence on the Manipulative Performance of Junior High School Students" (Unpublished)
 - (j) Hahn, Marshall S., "The Influence of Creativity on the Effectiveness of Two Methods of Instruction" (Unpublished)
 - (k) Ingvalson, Brian I., "Materials Handling Unit" (19)
 - (l) Ingvalson, Brian I., "Hay Baler Unit" (22)
3. The following studies by staff members are currently in progress:
- (a) Moss, Jerome Jr., et al., "Project Improve: A System for Evaluating Vocational Programs".
 - (b) Jiloca, Editha and Smith, Brandon B., "Factors Influencing the Occupational Choice of High School Seniors".

4. The following studies, partially supported by the Unit, are in progress:
 - (a) Pucel, David J. and Nelson, Howard F., "Project MINI-SCORE".
 - (b) Collofello, Patricia, "The Effect of Two Types of Feedback on Student Teachers".
5. During the period covered by this report, the program development units in the State Department and the Junior College Board have developed eleven new occupational education curriculums, mainly in emerging occupations.

IV. CONCLUSIONS

The Advisory Committee has, on several occasions, reviewed the Unit's activities in terms of its purposes, and re-examined those purposes in light of changed conditions in the State. On two of those occasions (June 10, 1966, April 10, 1968) it has formally reported to the U.S. Office of Education that (a) the Unit has made satisfactory progress to its established purposes, and that it has served a very useful role in the State, and (b) proposed changes in emphasis in the Unit's objectives were consistent with current and anticipated needs in the State, and that suggested future activities were appropriate to those objectives.

From the co-directors perspective, the Unit has had reasonable success during the past two and a half years in fulfilling its mission. Despite the fact that extremely limited funds were available through the State Department to support local research and development in occupational education, which severely limited the kinds of stimulative and coordinative activities possible, surveys by the Unit indicated a considerable increase in research activity in the State since the Unit's formation. While this increase cannot be assumed directly attributable to the Unit's efforts, there is probably some relationship between the two. In addition, nearly \$18,000 was secured from the Upper Midwest Regional Educational Laboratory to stimulate and coordinate research-related activity on a regional basis.

The Unit's dissemination efforts have made it as well known in the nation as in State. Its reviews of research and technical report series have been very favorably received. But despite national recognition, dissemination within the State has not been adequate. The problem is to decide how and what to disseminate. While the computerization of our library card catalog will facilitate requests for individual searches, the basic question of how to get relevant information to all the various groups who should have it has not yet been solved.

Research training has been a concomitant activity, a natural outgrowth, of all other Unit activities. By taking advantage of its University affiliation and by supplementing its own efforts with nearly \$120,000 of federal funds, the Unit has succeeded in increasing the statewide (and national) production of competent researchers.

Finally, by using only its own funds, the Unit has fully or partially supported sixteen completed studies and four which are currently in progress. This effort was coordinated with State Department and Junior College efforts, was focused upon research problems not ordinarily undertaken by vocational education practitioners, and did not reflect the large number of projects for which technical consultation was provided.

The future of the Unit appears bright. The support which came directly from the USOE for this project will now be replaced by funds given to the Minnesota State Department of Education under Title I of PL 90-576. This support will permit the continued operation of the Unit at the University of Minnesota on a scale somewhat larger than in the past. The functions of the Unit will remain essentially the same. It will be responsible for (a) stimulating, facilitating and coordinating occupational education research in the State, (b) providing dissemination services, (c) carrying out research training activities, and (d) conducting research and innovative development projects that will have a long-range impact upon the quality of occupational education. The State Department will continue to be responsible for (a) operational research, (b) normative development, (c) program evaluation, and (d) research

administration. Working cooperatively, the State Department and the Unit will, together, provide the research-related functions necessary to help insure the continued improvement of vocational programs within the State.

APPENDIX A

PUBLICATIONS OF THE
MINNESOTA RESEARCH COORDINATING UNIT
FOR
VOCATIONAL EDUCATION
(March 1, 1967 - August 31, 1969)

1. Final Report. Project No. 5-0097, Grant No. OE-5-85-120, March 1967. 19 pp.
2. Moss, Jerome Jr. and Nelson, Howard F. Planning for a Cooperative Region-wide Study in Occupational Education. July 1967. 24 pp.
3. Pucel, David J. and Nelson, Howard F. Area School Student Selection Project: A Preliminary Look at the Test Battery Data. July 1, 1967. 11 pp.
4. Jiloca, Editha A. Bibliography of Studies in Occupational Education Conducted in Minnesota: 1965-67. 26 pp.
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